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Merger Simulation Analysis: an academic perspective*

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Abstract

We discuss the benefits and limitations of modern merger simulation analysis from an academic perspective. The first part of our exposition focuses on game–theoretical issues and provides insights from experimental economics. In the second component we explore choices to be made in the empirical implementation.

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1 Introduction

Merger control is changing. In Europe, we have recently seen a change in the *substantial test* that is used to assess mergers. While the old test required the authorities to investigate whether a dominant position was created or strengthened as a result of the merger, the new test insists that it be investigated whether or not the merger would significantly impede effective competition. As has been widely discussed, this change brings European merger policy more in line with that in other jurisdictions such as the UK and the US. The change in focus, from dominance to effective competition, roughly a shift in focus from Article 82 type tools to those used in the analysis of Article 81 cases, invites and enables the use of new techniques of economic analysis. At the same time, it raises old questions: what is competition and what do we mean by a significant impediment to effective competition? Is an impediment to competition equivalent to a reduction of total welfare or of consumer surplus? Or are these static notions from welfare economics too narrow and should we also consider dynamic aspects, i.e. treat competition as a process? Would a more dynamic approach do away with the possible divergence between competition and consumer welfare? These issues are discussed to some extent in the EU Guidelines on the assessment of horizontal mergers (European Commission, 2004), and also (at a more abstract level) by Boone (2004a), who argues that there is no obvious definition of 'competition' and that measuring the degree of competition is a nontrivial exercise.

Not only is the formal test for the assessment of the effects of mergers changing, the techniques for implementing it are changing, also. There is now more scope for the use of novel scientific methods. Merger control aims to prevent mergers that reduce consumer surplus by increasing the market power of firms. As economists are well aware, market share is a rather imperfect proxy for market power. Hence, methods that are based on market share criteria alone may induce both type I and type II errors, i.e. some anticompetitive mergers proceed and some nonproblematic ones are disallowed. Targeting market power directly may be difficult and is moreover still circuitous. In a sense, the newer methods target the ultimate criterion, i.e. consumer surplus, directly: they investigate or estimate how consumer surplus changes as a result of a merger. The methods build on and integrate two branches of economics: game theory and econometrics. In this paper, we discuss these two subdisciplines in the current context. In doing so, we explore the benefits and limitations of modern merger analysis, i.e. of merger simulation, from an academic perspective.

The first part, section 2, deals with (game–)theoretical issues. We argue that a merger analyst must make several modelling choices, each with its own assumptions. Some assumptions are taken for granted in the (neo–classical) theoretical literature, others are implicitly made to maintain tractability in empirical work without full support from theory. We discuss the results of several experimental studies and some field studies which call the validity of several of these assumptions into question. However, since the subjects in such experiments are typically inexperienced students, not company executives, it is not clear what credible inferences can be made on the basis of such experiments (with respect to the plausibility of assumptions) when it comes to the analysis of actual mergers. See Götte and Schmutzler (2005) for an overview of experimental results related to mergers.

Section 3 explores the choices to be made in the empirical implementation. Typically, richer data sets yield results that are more precise, but that are also more expensive to obtain. We discuss the pros and cons of each choice, depending on the situation a merger analyst encounters. We argue that while calibration is cheap and can be done in a limited amount of time, it is less reliable than estimation and does not provide testability.

Section 4 concludes.

2 Theory

What effect will a merger have on prices, quantities, consumer surplus and total welfare? A growing literature attempts to answer this question by means of model simulation. Such a simulation analysis requires three types of input: input relating to the demand side, to the supply side and to the mode of competition.

2.1 Pre–merger data

In the first stage, the model is calibrated or estimated using pre–merger data. Usually, one begins by estimating a system of demand equations for all products under consideration. As the various chapters in this book testify, a great many possibilities exist. In section 3, several of these are discussed in some detail.

As a second important building block, the analyst assumes a form (mode) of competition between the firms. Frequently, the Bertrand model is used, as Bertrand (price) competition is often viewed as a good representation of the competitive situation. Alternatives abound: the Cournot (quantity setting) model may be used, or an auction model (and in that case there are several candidates to choose from), or one may use a supply function equilibrium model, in which bidders bid quantities depending on the price that will eventually result in the market, as in Zwart and De Maa (2005). If one expects that the pre–merger situation is characterized by a certain degree of collusion already, one may start out with reaction function equilibria, or another type of equilibrium known from the 'Folk Theorem,' an important result in repeated game theory. Given the plethora of choices, it will be clear that knowledge about the industry is useful, indeed indispensable, to guide the proper choice.

The third relevant element of the pre–merger model relates to the supply side, that is, the (marginal) cost functions of the firms involved in the industry. Assuming profit maximization, one can frequently infer the marginal costs from the estimated elasticities and the form of competition.

For example, in the case of monopoly we have

$$\frac{p-c}{p} = \frac{1}{\epsilon}, \tag{1}$$

where ϵ is the (absolute) price elasticity of demand, hence, if $\epsilon = 2$ and $p = 10$ we must have that marginal cost is given by $c = 5$: we do not need to estimate marginal cost separately.

Note, however, that in order to infer marginal costs from prices, we had to use another assumption, i.e. profit maximization by firms. While this is a standard assumption to make in neo–classical economics, we know surprisingly little about actual price setting in real markets; see for example the large–scale ECB project on inflation persistence in the Euro area and in particular the background papers to the December 2004 conference.[1] Furthermore, we know (cf. e.g. Bartelsman and Doms (2000)) that firms active in the same market can differ substantially in their productivity levels. Hence, competitive forces are apparently not always sufficient to guarantee that firms maximize profits. Related to this, the extensive discussions on corporate governance indicate that managers may well induce a firm to deviate from profit maximization. In short, the result that marginal costs can be inferred from other data relies on strong assumptions. It would therefore seem worthwhile to try to estimate marginal costs independently.

Thus, for each of the three types of data that are needed to conduct a merger simulation, there are a lot of choices to be made. One should hence be careful not to exaggerate the implications of one's analysis.

2.2 Equilibrium

In the best case, the constructed model will have a unique equilibrium, thus allowing an evaluation of the pre–merger situation in terms of total welfare or consumer surplus. One is not always so lucky. Repeated games and supply function models allow for multiple equilibria, in which case additional assumptions have to be made. The paper of Zwart and De Maa (2005) provides an example of this. In the simulation of the Nuon–Reliant merger done by the NMa, the central prediction was based on the 'median equilibrium,' but this equilibrium concept is not solidly grounded in game theory. In fairness, game theory cannot currently provide an adequate answer to the authors' problem. In fact, while frequent references to selection criteria such as 'risk dominance' and 'Pareto dominance' occur in the (game theory) literature, one has to admit that, in general, the equilibrium selection problem is unsolved. Be that as it may, the selection of the 'median equilibrium' is not based on any of the general selection criteria from game theory.

Let us assume that the mode of competition is Bertrand and that the equilibrium is unique. A merger brings different products under common ownership and it will in this case relax the competitive pressure on the merging firm, such that it typically will be able to increase prices. If

[1] See http://www.ecb.int/events/conferences/html/inflationpersistence.en.html.

reaction functions[2] are upward sloping, as they typically are, other firms will respond by raising prices, also. Consequently, all prices will increase and the consumers will be worse off. That is, if there are no synergies.

2.3 Efficiencies

If the merger allows the merging firms to produce at (substantially) lower marginal cost, then, in the setting described above, the new firm may be a more aggressive competitor, and there can be downward pressure on prices instead. This shows that it is important to incorporate appropriate assumptions about the cost savings that are obtained as a result of the merger into the analysis. However, as the EU Guidelines on the assessment of horizontal mergers state: "cost savings are easily claimed but seldom demonstrated." The Guidelines insist that the efficiencies generated by the merger are likely to enhance pro–competitive behavior that is ultimately to the benefit of consumers. Specifically, the efficiency gains have to benefit consumers, they should be merger–specific and they should be verifiable. These are formidable requirements.

The Guidelines further require (in paragraph 80) that marginal cost reductions are more important than reductions in fixed costs. This stance is justified in case the standard neo–classical assumption of profit maximization is appropriate but, as mentioned above, such an assumption is not necessarily accurate. Accordingly, it is possible that the pricing policy of the merging firms is such that fixed cost reductions can also result in lower prices. That this possibility should not be rejected out of hand is supported by the experiments conducted by Offerman and Potters (2000). The authors report on the results of Bertrand games in which players first have to pay to acquire the right to participate in the game. The payment to participate in a game is a sunk cost which, according to standard theory, implies that it should not influence the price that is charged.

Indeed, as Ricardo first argued, the market price determines the price one is willing to pay to enter the market, not the other way around. Offerman and Potters (2000), however, find that in their experimental markets it is in fact the other way around: if players have to pay more, they compete less fiercely and charge higher prices. Specifically, if the right to play is auctioned, then the higher the auction price, the higher the market price. More generally it might be true that higher fixed costs result in higher market prices, and consequently that a merger that reduces fixed costs also reduces prices.

Efficiency gains in the form of a reduction of marginal costs do not necessarily result in lower prices. This is the case if the cost savings are large enough and if the mode of competition remains Bertrand. But Boone (2004b) has argued that lower marginal costs do not necessarily lead to lower prices if the mode of competition changes. Consider e.g. the following setting in which there is inelastic demand $D(p) = 1$ if $p \leq 1$ and there are three firms with marginal costs $c_1 = 0$, $c_2 = 0.5$ and $c_3 = 0.7$. Boone argues that in this pre–merger situation, Bertrand competition is likely to

[2] A reaction function is a representation of one firm's response to another firm's pricing decisions.

result, and the market price will hence be $p = 0.5$. Now assume that firms 2 and 3 merge so as to produce a very efficient competitor of firm 1 with equal marginal costs $c_{23} = 0$. In the post–merger situation, competition is an unattractive outcome for the firms. Boone argues that the mode of competition will change to tacit collusion and that the market price will increase to $p = 1$. Consequently, consumer surplus is lower as a result of the merger. (Since we assumed demand to be inelastic, total welfare is unchanged.)

2.4 The mode of competition

The model of Boone (2004b) is a theoretical model. There is also some experimental evidence that shows that the mode of competition may change as a result of a merger. Huck et al (2003) find that, in the experimental laboratory, a merger may have psychological effects. The authors consider a symmetric n–person Cournot quantity setting game that, in the pre–merger situation, is played for 25 rounds. Next, two of the players are randomly chosen and are forced to merge, without there being any cost reduction; after the merger an $(n-1)$–player Cournot game is again played for 25 periods. If the mode of competition would remain unchanged, the merger would be unprofitable, that is, the merging players would be worse off as a result of the merger, however Huck et al (2003) demonstrate that the actual result is different: the merged firm increases output and the other firms decrease output somewhat. There is a movement in the direction of the Stackelberg outcome, and the post–merger quantities are asymmetric even though the post–merger situation is a symmetric one. Huck et al (2003) explain their results by referring to the fact the players adopt payoff aspiration levels during the first phase of the game and that they do not want to accept lower payoffs after the merger. If this effect indeed is present, and all players take it into account, then the outcome does indeed move into the direction as observed in the experiment. Of course, we do not know whether similar effects are at work in real world mergers, but they should not be excluded a priori.

2.5 Coordinated effects

Competition authorities are well aware of the possibility that a merger may change the mode of competition: they typically worry not just about the unilateral effects of mergers, but also about so–called possible coordinated effects. In paragraph 39 of the Guidelines on the assessment of horizontal mergers in the EU, we read:

> In some markets, the structure may be such that firms would consider it possible, economically rational and hence preferable, to adopt on a sustainable basis a course of action on the market aimed at selling at increased prices. A merger in a concentrated market may significantly impede effective competition, through the creation, the strengthening of a collective dominant position, because it increases the likelihood that firms are able

> to coordinate their behavior in this way and raise prices, even without entering into an agreement or resorting to a concerted practice within the meaning of article 81 of the Treaty.

The next paragraphs of the Guidelines then discuss the forms that coordination may take and in what circumstances coordinated price increases or coordinated quantity reductions may become more likely. In this respect the document mentions four aspects in particular: (i) the ease with which parties can arrive at a common perception of how coordination should work, (ii) the ease with which deviations from the 'coordinated plan' can be detected, (iii) the availability of mechanisms to punish deviations from the plan, and (iv) the responses of outsiders, including the possibility of new entry into the market.

As the discussion in these Guidelines make clear, the conceptual framework underlying that discussion is the afore–mentioned Folk Theorem of repeated games, a theorem that states that under certain conditions any agreement that could rationally be reached by market parties can be obtained as a self–enforcing plan, i.e. as an equilibrium, of the repeated game. In this applied context, at least two remarks should be made in relation to this theorem. First, the assumptions underlying the theorem are quite strong and should not be forgotten, especially the informational assumption. The (standard) Folk Theorem assumes that, at each point in time, the history of the game is common knowledge: all players have the same information, all players know this, etcetera. In case players have private information, for example about their individual sales or about the (secret) price discounts they have given to their costumers, situations which are likely to occur in practice, this assumption does not hold, hence, the Folk Theorem result need not hold either; see e.g. Stigler (1964). Second, even if the assumptions are satisfied, the Folk Theorem just is a possibility result, coordination *could* be the outcome, but it does not necessarily arise. Standard game theory assumes that, if there are multiple equilibria, players will somehow succeed in coordinating on an equilibrium, but the theory is silent on how this will be achieved and which equilibrium will result.

In this respect, one should bear in mind that the Folk Theorem typically does not only allow for equilibria that are better than the equilibria of the one–shot game, but that it also allows for equilibria that are worse from the firms' point of view, i.e. ones that are better for consumers. In applied work, it is often assumed that the most profitable equilibrium is the one that is played. There is, however, little justification for that assumption in the formal game–theoretic literature. Experiments have shown, moreover, that in situations where the more attractive equilibria are also more risky, safer equilibria with lower payoffs can result; see Van Huyck et al. (1990) and Battalio et al. (2001). In short, in situations with multiple equilibria, the theory remains silent on why a specific equilibrium arises, or indeed why there should be an equilibrium at all. Experiments show that in such cases non–equilibria may indeed be the outcome and that if an equilibrium results it need not be the one with the highest payoff. In fact, it may be the one with the lowest payoff.

Sometimes, the caveats mentioned above seem to be insufficiently taken into account. For example, in Airtours/First Choice, the commission wrote:

> It is not a necessary condition of collective dominance for the oligopolists always to behave as if there were one or more explicit agreements (e.g. to fix prices or capacity, or share the market) between them. It is sufficient that the merger makes it rational for the oligopolists, in adopting themselves to market conditions, to act — individually — in ways which will substantially reduce competition between them. (paragraph 54)

The question is under what conditions it is rational for oligopolists to reduce competition between them. Is it sufficient if there is an equilibrium in which competition is reduced? The game–theoretic literature suggests 'no,' since in these cases the players will not necessarily succeed in reaching this equilibrium. The players may want to establish such a coordinated outcome, but the fact that coordination is a theoretical possibility does not imply that it will be practically feasible.

In short, the Folk Theorem shows that tacit collusion may be an outcome, but it does not state that such an outcome must necessarily result: there are a lot of practical barriers that stand in the way. Indeed, if there is one lesson coming out of the experimental economics literature on tacit collusion, it is that such tacit collusion is hard to obtain; see Haan et al (2005). In particular, Dufwenberg and Greezy (2000) and Huck et al. (2004) find that experimental markets are already competitive when the number of players exceeds two. This does not imply that tacit collusion, collective dominance and coordinated effects should not be aspects of concern; it just implies that such effects are not usually found in laboratory experiments, which should lead us to play down the value of these models for merger analysis.

3 Data

3.1 Bias versus Variance

There are two factors determinining the precision of the results of any empirical study: bias and variance. If there is a systematic tendency of a procedure to produce results which are off in one direction (upwards *or* downwards), then the procedure is biased. If empirical results are sensitive to changes in the data, then variance is a concern. Thus, high bias/low variance procedures produce results which systematically and substantially over– or under–state the 'truth,' whereas the results of low bias/high variance procedures are frequently off by large amounts in either direction. The ideal is hence a low–bias/low–variance procedure.

Model complexity plays a large role in the bias/variance tradeoff. Models which are too simple provide a poor description of competitive reality, thereby inducing bias. In models with more unknowns, on the other hand, the variance tends to be greater since more information has to be extracted from the same amount of data, causing more variability in one's results. Correspondingly, by increasing the amount of data the variance is reduced. Hence in larger data sets it is generally advisable to choose a somewhat larger model, such that both the bias and the variance are less than with a smaller data set.

The above generalities apply to all empirical scenarios when the objective is to obtain the most precise estimates/predictions. There are cases, however, in which it is preferable to accept more bias than is optimal in terms of estimation precision. Sometimes, the direction of bias is known or can be controlled. For instance, if an estimated price effect is known to be biased downward and its variance is small, then the exact price effect is immaterial if the price effect found using this procedure is large; it is already clear that the proposed merger is highly anti–competitive, the precise extent is irrelevant. If the price effect found is low, however, then a high bias/low variance procedure is inconclusive. So here a larger data set still produces better results than a smaller one since the bias is then less for the same amount of variance (or vice versa), thereby increasing the number of cases in which the proposed procedure provides a definite answer.

So richer data sets provide results which are more accurate and reliable, but which are also more costly to obtain. Below is a discussion of potential methods of merger analysis, starting with the least data–intensive.

3.2 A Pauper's Choice

If data are limited due to money and/or time constraints, the only option — absent reliable elasticity estimates in the literature — is a *calibration*–analysis. Calibration entails the use of a minute amount of economic data to infer relevant quantities in a structured economic model. Calibration yields exact results if the model is a perfect description of reality and all relevant data correspond exactly to the variables in the model and are observed without error. If these assumptions are satisfied, then data requirements can be as little as a few aggregate price and (market) share numbers; see e.g. Epstein and Rubinfeld (2004). More elaborate models can be calibrated with a few more data points: essentially one additional parameter per observation; Epstein and Rubinfeld's (2004) PCAIDS with nests model is an example of these.

Unfortunately, models are never exact and neither are data. Precision of the results of a calibration study is affected by the proximity of the model to the 'truth,' data quality, and model complexity. A simple model which is a good description of reality combined with reliable data yields the best results. For instance, a calibration study using a flat logit model may give reasonable results if it is known that market shares of any two products A and B change by the same percentage if any third product C were to be taken off the market.[3] The trouble with calibrating richer models is that there are unknown parameters whose values need to be inferred, thereby exacerbating the already serious variance problem resulting from the paucity of data. Consequently, a PCAIDS model with several nests is rarely advisable for a calibration study, and the same (to a lesser extent) applies to the nested logit model.[4] But a flat logit model may be a poor description of the market studied, and the tradeoff between generality of the model and the variance can be

[3]The *independence of irrelevant alternatives* assumption.

[4]The number of unknowns in a PCAIDS with nests model is generally greater than in a nested logit.

tricky.

Whether one calibrates or estimates, it is necessary to extrapolate one's results to the post–merger situation. Doing so relies on the validity of the elasticities obtained in the calibration (or estimation) exercise, on the assumption that only brand ownership changes post–merger, and on the assumption that the model is a good description of the market away from the current equilibrium, also. Any errors in the elasticities will be magnified in post–merger predictions. Errors in calibrated elasticities are generally greater than those in estimated elasticities.

Since with calibration there is no way to determine which model provides the best description of reality, or indeed which model is the optimal choice in the bias/variance tradeoff exercise, it is advisable to produce predictions using a variety of plausible model choices. Some models are known to consistently produce higher predicted price effects than others, e.g. flat logit versus linear, and it has been argued (e.g. Werden et al., 2004) that both numbers should be computed and the least favorable one selected. Although this is good advice, there is no guarantee (or convincing argument to believe) that the true price effects will be inside the range so indicated.

The main problem with calibration is its implicit assumption that errors are absent from both the model and the data. This assumption is necessary since the presence of errors would invalidate the calibration procedure. Absent any errors there is no reason to evaluate the reliability of one's inferences. But even if one wanted to conduct some basic tests on the validity of either the model or inferences based thereon, the shortage of data would preclude one from doing so. In other words, there is no way to evaluate the validity of one's findings in any meaningful (formal) fashion.

Despite the above–described limitations, a calibration study is valuable in a competition authority's decision as to which cases to pursue and is the method of choice if a more sophisticated/comprehensive analysis is not feasible.

3.3 A Yeoman's Choice

If the number of brands is large and/or product data are available for a number of different markets, one can estimate rather than calibrate elasticities. Like with calibration, estimated elasticities depend on the model chosen and also on assumptions made about the relationship between errors (their existence is now allowed) and model variables. However, all such model assumptions are now testable. Moreover, the data can be used to determine formally which of several model specifications is the most appropriate. Finally, the precision of price effects imputed from an estimation–based study can itself be gauged and hence some upper– and lower–bounds on the likely price effects can be determined. The verification possibility is available with estimation due to the presence of more data points than are strictly necessary to estimate the coefficients in the model; with calibration the absence of such 'slack' precludes testability.

As mentioned earlier, model choice should depend on the available data, with richer data sets leading to larger models. All models that are calibrated can, conditional on data availability, also be estimated. Some more complex models, such as the Berry–Levinsohn–Pakes (BLP, 1995) *random coefficients model*, require a considerable investment of time to estimate properly. The Pinkse–Slade (PS, 2004, see also Pinkse, Slade and Brett, 2002) nonparametric estimator, on the other hand, is straightforward to use, but requires the existence of a large number of brands; with a small number of brands and a large number of markets the PS model typically reduces to an equivalent simpler model.

All estimation procedures make assumptions about the relationships between various elasticities across brands and/or markets (e.g. cities or time periods), explicitly or implicitly. But again, all such assumptions are testable. The assumed structure of cross– and own–price elasticities is implicit in the structure of *discrete choice models* (such as logit and BLP), and explicit with AIDS (Deaton and Muellbauer, 1980) and PS. The need for such assumptions arises from the vast number of own– and cross–price elasticities: if there are n products in m markets then the number of elasticities is mn^2. Assuming that elasticities are the same in all markets reduces the number of elasticities to n^2, which is manageable without further restrictions when m is large relative to n^2. Often, n^2 is still too large, and further assumptions are necessary to make the model estimable with the available data. With a logit model, for instance, the number of unknowns is further reduced from n^2 to 1, which is indicative of the restrictiveness of the assumptions made. At the other extreme, the PS methodology merely requires the number of unknowns to be small relative to the total number of observations, i.e. mn, a minimal condition for all unknowns to be estimable.

Model choice should also depend on the applicability of the underlying assumptions associated with each model. With the logit and random coefficient models, for instance, the model is structured in terms of individual consumers' purchase decisions of single products. Such models are most appropriate for the modelling of large ticket items, such as automobiles, but are less suitable for products which are purchased repeatedly in a small amount of time, in variable quantities, or in combination with similar products. Nevertheless, random coefficients models have been used to analyze competition in markets for such products as breakfast cereals (e.g. Nevo, 2000), which are bought on a regular basis, in variable quantities and at the same time as other breakfast cereals. The Hausman, Leonard and Zona (1994) procedure allows for variable quantities, but is in other dimensions more restrictive than is the random coefficients model.

A thorny issue is that of the potential 'endogeneity' of covariates. There is often an implicit assumption in empirical work that prices and quantities depend on covariates, but not vice versa, but such exogeneity assumptions are questionable. Brand characteristics, for instance, are chosen to maximize future profits and the optimal choice of such characteristics will depend on other model variables, including (anticipated) prices and quantities. This problem can be finessed by the argument that brand characteristics are chosen long before the current pricing game and are expensive to change. Whatever the case might be, it is unquestionably true that in most instances a merger analyst will have bigger fish to fry, i.e. there are other problems which are likely to have a greater effect on her results.

The main limitations of estimation with market–level data, then, are the greater data requirements than those necessary for calibration, a greater investment of time, and the existence of a still better, albeit more expensive, alternative: estimation using consumer–level data.

3.4 A Prince's Choice

Models for market–level data are typically generated by aggregating a model for individual consumer choices across all individuals. Such aggregation can take various forms and is only valid if a number of (sometimes simplistic) assumptions are satisfied. For instance, in market–level random coefficient models consumer heterogeneity is represented by a random variable, which is integrated out over all coefficients. But even if aggregation assumptions are questionable, the implied market–level relationships can form a reasonable approximation to the actual ones, and the proximity of implied to actual is statistically verifiable.

It is nonetheless preferable to use consumer–level data (e.g. from supermarket scanners) if such data are available. Besides mitigation of aggregation problems, the sheer amount of micro–level data typically results in more accurate estimates despite the fact that consumer preferences are highly variable and scanner data only apply to a (potentiallly nonrepresentative) subset of consumers.

The main limitation of using consumer–level data is cost; such data when available from a commercial source are expensive and the time required for collection and analysis can be substantial. Indeed, the time requirements are likely to be prohibitive.

4 Conclusions

None of the above is intended to discredit any other work in this book, or indeed to take away from the potential value of the 'new tools' of merger analysis. Instead, we hope to have pointed out some of their limitations. Uncritical implementation of any methodology is foolhardy. Nevertheless, modern merger analysis methodology constitutes a useful addition to a merger analyst's arsenal. If 'standard analysis' is limited to the mechanical computation of market shares and Herfindahl indices and the application of rigid rules (the merger is disallowed if the value of the index or the change thereof is sufficiently large), then the new methods are an indisputable improvement. They allow for a rational discussion of the issues that matter. If used appropriately, they provide credible information on the extent of the anticompetitive effects of a proposed merger, particularly if the analysis is based on a rich data set, if the results are verified using statistical procedures and/or the results are supported by more traditional methods.

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